

REMARKS

Claims in the case are 5 and 7-11, upon entry of this amendment. Claim 7 has been amended herein. No claims have been added, and no claims have been cancelled herein. Entry of the present amendments to the claims is respectfully requested as they are deemed: (i) to place the claims in condition for allowance; and (ii) not to raise additional material issues.

Claims 5 and 7-11 stand rejected under 35 U.S.C. §112, first paragraph. This rejection is respectfully traversed in light of the amendments herein and the following remarks.

The recitations as to the auxiliary substance (i)(A) and (ii)(C) of Claim 1 have been deleted by amendment herein. A wherein clause has been added to Claim 1, in which the thermoplastic polyurethane elastomer may optionally comprise at least one auxiliary substance. Basis for this amendment to Claim 1 is found at page 3, lines 21-22, and at page 6, lines 1-27 of the specification.

Claim 1 has been amended to change the upper values of the preheat temperatures such that they are now supported by the specification. The preheat temperature range in (A) of Claim 1 has been changed from "130°C to 250°C" to --130°C to 230°C--. The preheat temperature range in (B) of Claim 1 has been changed from "50°C to 250°C" to --50°C to 150°C--. The preheat temperature range in (C) of Claim 1 has been changed from "130°C to 250°C" to --130°C to 230°C--. Basis for the amendments to the preheat ranges of Claim 1 is found at page 6, lines 28-31 of the specification.

In light of the amendments herein and the preceding remarks, Applicants' claims are deemed to meet the requirements of 35 U.S.C. §112, first paragraph. Reconsideration and withdrawal of this rejection is respectfully requested.

Claims 5 and 7-11 stand rejected under 35 U.S.C. §103(a) as being unpatentable over United States Patent No. 3,901,852 (**Shah**) in view of United States Patent No. 5,905,133 (**Müller et al**). This rejection is respectfully traversed with regard to the following remarks.

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Shah discloses the preparation of a thermoplastic polyurethane by means of a continuous one-shot procedure, in which all of the reactants are reacted at the same time, rather than in stages (column 4, lines 4-7). Shah discloses reacting the reactants in suitable molds or extrusion equipment (column 4, lines 35-36).

Applicants respectfully counter the comments in the first paragraph at the top of page 3 of the Office Action regarding Shah disclosing the preparation of his TPU by means of a prepolymer process. Shah actually teaches away from the preparation of TPU's by means of a prepolymer method. At column 5, lines 3-8, Shah describes the prepolymer method as being "less preferred."

In addition, the examples of Shah make use of a one-shot method, and not a prepolymer method. In the examples of Shah, the TPU's are prepared by: degassing a mixture of glycol and hydroquinone bis(2-hydroxyethylether) at a temperature of 110°C; addition of catalyst and di-isocyanate thereto; brief high speed mechanical mixing; and pouring of the reactive mixture into a shallow aluminum tray. See column 6, lines 5-16 of Shah. It is important to note that degassing a mixture of glycol and hydroquinone bis(2-hydroxyethylether) at a temperature of 110°C can not result in the formation of a prepolymer, as both components have hydroxyl functionality only. The catalyst and di-isocyanate are added after the degassing step. In the examples of Shah, no appreciable polymerization occurs until after all of the components are finally mixed together.

Müller et al disclose a 6-step process for the continuous preparation of TPU's (abstract). More particularly, the 6-step process of Müller et al involves:

- (A) mixing a polyol and an organic di-isocyanate;
- (B) forming a prepolymer from the mixture of step-(A), e.g., in a tubular reactor;
- (C) mixing the prepolymer of step (B) with additional organic di-isocyanate;
- (D) cooling the prepolymer / di-isocyanate mixture of step (C);
- (E) mixing the cooled prepolymer / di-isocyanate mixture of step (D) with diol and optionally triol and/or diamine; and
- (F) reacting continuously the mixture of step (E), e.g., in an extruder, to form the TPU.

See the abstract; column 2, lines 37-65; column 5, lines 48-55; and column 6, lines 18-20 of Müller et al.

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Shah teaches away from the use of a prepolymer method of TPU preparation. Müller et al discloses a very detailed 6-step prepolymer method for preparing TPU's. As such, neither Shah nor Müller et al provide the requisite disclosure that would reasonably motivate a skilled artisan to combine or otherwise modify their disclosures to arrive at Applicants' claimed process.

As the Court of Appeals for the Federal Circuit has stated, there are three possible sources for motivation to combine references in a manner that would render claims obvious. These are: (1) the nature of the problem to be solved; (2) the teaching of the prior art; and (3) the knowledge of persons of ordinary skill in the art, *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998). The nature of the problem to be solved and the knowledge of persons of ordinary skill in the art are not present here and have not been relied upon in the rejection. As for the teaching of the prior art, the above discussion has established that neither of the patents relied upon in the rejection provide the requisite teaching, and certainly do not provide the motivation or suggestion to combine that is required by Court decisions.

Even if Shah and Müller et al were combined, Applicants' claimed process would not result from such combination. Shah discloses a one-shot method of TPU preparation, and teaches away from a prepolymer method of TPU preparation. Müller et al discloses a detailed 6-step prepolymer method of TPU preparation that includes three (3) separate steps between the prepolymer formation step (B) and the final TPU formation step (F). The method of Applicants' present claims is a two-stage continuous process in which the prepolymer formed in step (i) is then reacted in a second stage (ii) in an extruder with 1,4-di-(2,2'-hydroxyethyl)-hydroquinone. Applicants wish to point out that the transitional language of their present sole independent Claim 7 is closed-ended (i.e., "consisting of"), which is exclusive of intervening steps between steps (i) and (ii).

It is respectfully submitted that the rejection appears to impermissibly use the present application as a blueprint for selecting and combining or modifying the cited references to arrive at Applicants' claimed invention, thereby making use of prohibited hindsight in the selection and application of those references. "To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall

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victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher." *W.L. Gore & Assoc. v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983). One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fine*, 837 F.2d 1071, 1075 (Fed. Cir. 1988).

In light of the preceding remarks, Applicants' claims are deemed to be unobvious and patentable over Shah in view of Müller et al. Reconsideration and withdrawal of this rejection is respectfully requested.

With regard to the amendments herein and the preceding remarks, Applicants' presently pending claims are deemed to meet all the requirements of 35 U.S.C. §112, and to define an invention that is unanticipated, unobvious and hence, patentable. Reconsideration of the rejections and allowance of all of the presently pending claims is respectfully requested.

Respectfully submitted,

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